UNIVERSITY OF MARYLAND EXTENSION

TPM/IPM Weekly Report
for Arborists, Landscape Managers & Nursery Managers

Commercial Horticulture **May 18, 2018**

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Pest Predictive Calendar

IPMnet
Integrated Pest Management for Commercial Horticulture

extension.umd.edu/ipm

If you work for a commercial horticultural business in the area, you can report insect, disease, weed or cultural plant problems **(include location and insect stage)** found in the landscape or nursery to sklick@umd.edu

Coordinator Weekly IPM Report:
Stanton Gill, Extension Specialist, IPM for Nursery, Greenhouse and Managed Landscapes, sgill@umd.edu. 301-596-9413 (office) or 410-868-9400 (cell)

Regular Contributors:
Pest and Beneficial Insect Information: Stanton Gill and Paula Shrewsbury (Extension Specialists) and Nancy Harding, Faculty Research Assistant
Disease Information: Karen Rane (Plant Pathologist), David Clement (Extension Specialist), and Joe Roberts (Plant Pathologist for Turf)
Weed of the Week: Chuck Schuster (Extension Educator, Montgomery County)
Cultural Information: Ginny Rosenkranz (Extension Educator, Wicomico/Worcester/Somerset Counties)
Fertility Management: Andrew Ristvey (Extension Specialist, Wye Research & Education Center)
Design, Layout and Editing: Suzanne Klick (Technician, CMREC)

Wet Weather – Finally Shows Up

By: Stanton Gill

We had been experiencing a mini-drought with landscapers and nursery owners reporting parched soil that is cracking in some locations from the lack of good, steady rain. This week, the rainy weather hit and will hopefully supply water during this critical time of year when foliage is expanding.

These spots are artillery fungus spores on siding; they can be very difficult to remove Photo: Paul Thomas, Scientific Plant Service

Paul Thomas, Scientific Plant Service, reported round, black structures that his customer was finding all over the house siding. This is shotgun or artillery fungus, *Sphaerobulus stellatus*. This fungus feeds on organic material and is common on hardwood mulches. The wet weather is resulting in the fungus shooting spores up in the air and adhering to house siding and sometimes cars. The spores are hard to remove from a surface, and removal might involve using something slightly abrasive to get them off the surface on which they are stuck. There is not much else you can do other than not have hardwood mulch near the base of a building or near expensive cars with light color paint jobs.

Call for Research Sites

The Shrewsbury Lab (UMD) **NEEDS LOCATIONS TO RELEASE NATURAL ENEMIES OF BROWN MARMORATED STINK BUG (BMSB)**. Please email Paula Shrewsbury (pshrewsbury@umd.edu) by Tuesday May 22nd if you think you have a location(s) that meets our requirements. Requirements for the release location:

- Be in Washington County or Frederick County, MD
- Have a history (last few years) of moderate to high densities of BMSB
- The site MUST HAVE WOODED AREAS WITH EDGES that are accessible
- Sites can be nurseries, orchards, parks, schools, etc. that have wood edges

Adult brown marmorated stink bug Photo: Paula Shrewsbury, UMD

Spotted Lanternfly

Gaye Williams, MDA, writes that Lawrence Barringer, entomologist at Pennsylvania Department of Agriculture, reports that spotted lanternfly, *Lycorma delicatula*, has started hatching in Pennsylvania. This new, very serious, invasive insect is expected to hit Maryland this season.

MDA asks that those of you involved in our green industry to thoroughly familiarize yourselves with all life stages of this pest (especially the nymphs), by viewing the pest alert at: mda.maryland.gov/plants-pests/Pages/spotted-lantern-fly.aspx.

Please report any possible sightings to MDA at: DontBug.MD@maryland.gov.

Look for spotted lanternfly nymphs that are now hatching Photo: Lawrence Barringer, Pennsylvania Department of Agriculture, Bugwood.org

You will also need to collect specimens and send them to: MDA- PPWM, 50 Truman Pkwy, Annapolis MD, 21401, as all identifications must be verified by MDA.

Thanks for your help.

Tree of Heaven and Spotted Lanternfly

Tree of heaven is a preferred host of spotted lanternfly and can help in monitoring. The trunks can be banded so the trees can be used as trap trees. For more details, check out the information posted by the Pennsylvania Department of Agriculture on spotted lanternfly.

Emerald Ash Borer (EAB) Update

By: Paula Shrewsbury

In last week's report, I wrote that plant phenological indicators and degree days were indicating that EAB adults should be emerging from their overwintering locations under tree bark. See the article for information on monitoring for it and how to respond. In the article, I stated that those on the west side of the bay need to monitor for and respond to EAB. I realize that this suggested that those on the Eastern Shore do not need to worry about EAB. This situation is not the case for multiple reasons. First, EAB has been detected on the Eastern Shore. I contacted Heather Disque from MDA and she confirmed that EAB has been detected in the following counties on the shore: Talbot, Dorchester, and Queen Anne's (all 2015) and Cecil and Kent in 2017; and has not been detected in Caroline, Wicomico, Worcester, and Somerset Counties. I also heard from an arborist at Bartlett who shared with me that in 2017 they found EAB in trees in Talbot County (Claiborne, Neavitt, Martingham, and St. Michaels).

Whether EAB has been detected in your area or not, you should be developing, and in many cases implementing, an EAB management plan. Since EAB populations are relatively low on the Eastern Shore you actually have a chance to develop a management plan (proactive) rather than getting caught by surprise and spending most of your time and money removing dead hazard ash trees (reactive).

For more detailed information on this topic go to: http://www. emeraldashborer.info/.

Crapemyrtle Aphids

Oscar Peña, Wray Brothers Landscapes, found early crapemyrtle activity on crape myrtles in Chevy Chase on May 15. We now receive regular reports of this aphid since crape myrtles are now so widely planted throughout the area. The crapemyrtle aphid produces multiple generations throughout the season so populations can increase quickly. Look for distortion and curling on new growth.
Control: Check for predators and parasitoids such as syrphid flies, lady bird beetles, and wasps (look for the aphid mummies) because they do a lot to keep aphid populations down. If aphid populations are high enough to warrant treatment, consider horticultural oil or Endeavor which have minimal impact on beneficials.

Crapemyrtle aphids have distinct black spots; also look for winged adults and cast skins on the underside of crape myrtle foliage

San Jose Scale

By: Stanton Gill

I have been monitoring San Jose scale, an armored scale, this season. The females are starting to lay eggs. I suspect we will see crawlers show up in the next 7 – 10 days. Look for this scale on apples, crabapples, peaches, plums, and pear trees.
Control: When crawlers emerge, Distance or Talus can be applied.

Cherry laurel is one of the hosts for San Jose scale

More on Scales

Oystershell Scale: Marie Rojas, IPM Scout, found oystershell scale (brown form) on *Cornus controversa* and *Halesia tetraptera*. She reported that crawlers were just hatching out under the covers in the Frederick area. This scale has a wide host range, but prefers ash, beech, birch, boxwood, cotoneaster, elm, fruit trees, lilac, maple, poplar, and willow. The adult female covers are approximately 3 mm long, convex, oystershell-shaped and can vary in color from light brown to dark brown to gray. The male covers are similar, usually smaller, and may not be present.
Control: Wait for crawlers to emerge from under the female covers. Control options include horticultural oil, insecticidal soap, Distance, or Talus applied to foliage.

Oystershell scale crawlers are starting to hatch so monitor closely to time control treatments
Photo: Marie Rojas, IPM Scout

Cottony Camellia/Taxus Scale: Bob Kestell, Terra Inc., found cottony camellia/taxus scale on hollies in D.C. on May 13. He did not see any wax being produced for the egg sacs during his site visit. Continue monitoring sites infested with this scale for the fluffy white egg masses over the next few weeks.
Control: Wait until egg hatch in late May and June, and then treat with pyriproxyfen (Distance) or buprofezin (Talus) mixed with 0.5 - 1% horticultural oil.

Look for cottony camellia/taxus scale to start producing waxy egg masses in late May
Photo: Bob Kestell, Terra Inc.

Calico Scale: Ben Statler, Ashton Manor Environmental, found calico scale on May 11 in Anne Arundel County. Check infestations of calico scale now. Crawlers will be active soon.
Control: Systemic insecticides work well as soil drenches for this soft scale since it is a phloem feeder. The other course of action is Distance or Talus during the crawler period.

Crawlers of calico scale are active starting in late May, but may be slightly delayed this year due to the cold spring
Photo: Ben Statler, Ashton Manor Environmental

Brown Rot on Cherry Trees

By: Stanton Gill

Dave Clement and I are conducting field trials this spring at Maryland nurseries to test out biofungicides (BotryStop and LifeGard) against brown rot, *Monilinia fructicola*. We were collecting data on Wednesday. One of the tree species in the control block is *Prunus* 'Snofozam' or, commonly called, Weeping Snow Fountains® Flowering Cherry. This cultivar was absolutely clobbered with brown rot this year. We generally think of brown rot as a disease of fruit, but it also infects leaves and stems during wet periods in the spring.

Brown rot infecton is starting on these cherries

Brown rot infects leaves and stems, as well as fruit
Photo: David Clement, UME-HGIC

We re also evaluting these biofungicides this season to also if they also work on cherry shot hole fungus. Shot hole disease causes cherry trees to defoliate in late summer, making them look like a nuclear winter in bad years.

Bad Looking American Hollies

By:Stanton Gill

At this period in mid-May, many American hollies are showing yellowing foliage and spotting on old foliage. Not to worry, this color change is just old leaves getting ready to drop off. If you look, you will see that American hollies are starting to push out new growth to replace the abscising leaves.

We are receiving reports from nursery growers who are growing American, Chinese, and hybrid hollies in containers that plants are suffering dieback as a result of the extreme cold of January. Holly roots in containers are damaged when temperatures drop into the teen range and we had temperatures down close to zero for 8-10 days in January of 2018. If you are seeing similar damage in your nursery, let me know at Sgill@umd.edu. Holly trees growing in soil seem to be generally doing well and had little damage from the cold. The exceptions are Burford and other Chinese hollies which have branch dieback and a lot of leaf scorching from the January cold period.

As American hollies push out new growth, the old yellow leaves are dropping off now

Ambrosia Beetles

We have received several reports of ambrosia beetle activity this week. Ben Statler, Ashton Manor Environmental, is finding frass tubes on trees in Anne Arundel County; Marie Rojas, IPM Scout, is finding them drilling into *Styrax obassia* in the Frederick area, and Bob Kestell, Terra Inc., found frass tubes on sycamores on an island on the Potomac near Travilah Road.

This sycamore along the Potomac River is heavily infested with ambrosia beetles
Photo: Bob Kestell, Terra Inc.

Ambrosia beetles are active. Note the wet areas on the trunk (toward the top of the photo) in the photo on the left; a frass tube produced by an ambrosia beetle is in the photo on the right
Photos: Ben Statler, Ashton Manor Environmental

Fire Blight

Craig Greco, Yardbirds Inc., is seeing early infection of fire blight this week. See Kari Peter's disease update from Penn State Extension for more information.

Monitor closely for fire blight
Photo: Craig Greco, Yardbirds, Inc.

Red Thread Showing Up in Perennial Ryegrass

By: Joseph Roberts, UMD

With the rapid weather change from winter-like conditions to intense heat over the span of a few weeks, it is that time of year when turfgrass diseases become more apparent. Dry conditions prior to this week followed by the heavy rainfall within the past few days will only drive more pathogens to become active, so stay observant in the coming weeks.

Red thread infection is in a mixed stand of perennial ryegrass and annual bluegrass
Photo: Joseph Roberts, UMD

Red thread was finally observed on perennial ryegrass this week. This is an interesting disease of cool-season turfgrasses that gives the turf a pink or reddish appearance. Red, thread-like extensions of the fungus, called sclerotia, emerge from the tips of the infected leaves, hence the name "red thread". On mornings with heavy dew formation, pinkish flocks of mycelium can also emerge from infected leaves. The distinct red color of the sclerotia are a key diagnostic feature of this disease as pink patch and snow mold are similar diseases that can produce similar sized patches of blighted turf. Red thread often occurs in slow growing turfgrass in cool, wet, weather conditions. Low nitrogen fertility can reduce turfgrass growth and is known to increase red thread. Perennial ryegrass is highly susceptible, along with fescues and Kentucky bluegrass.

Note the pinkish color of this patch of red thread in turf
Photo: Joseph Roberts, UMD

Control: As red thread is considered an issue in slow growing turfgrass, practices that enhance turfgrass growth will ultimately aid in reducing the disease. Cultural practices that increase airflow, drainage, and sun exposure will help to favor turfgrass growth. Implementing a fertilization plan to increase nitrogent fertility should reduce the disease over time, but reductions may not be immediate. Collecting clippings from infected areas can also avoid spread of the pathogen as the thread-like sclerotia become brittle, break-off with equipment, and remain viable for multiple years. Chemical control options are also available and preventive options work best. Curative fungicide applications should be made immediately upon symptom observation as prolonged disease progression is often difficult to control. In low-budget situations, cultural control options can go a long way to reducing symptoms in subsequent years.

2018 MDA Pesticide Recycling Program

The Maryland Department of Agriculture is offering the empty plastic pesticide container recycling program in 2018. You can view the locations and requirements in the online brochure.

Willow Sawfly

Marie Rojas, IPM Scout, found willow sawflies feeding gregariously on *Salix* 'Golden Curls' and *S. alba* 'Britzensis' on May 15 in Frederick County. There are two generations each year. First generation larvae feed in May and June. A second generation is active starting in July and continues through the end of the season. Heavy populations can cause significant damage and can reduce overall growth, especially of young trees.

Control: For small populations, physically removing young larvae is an option. Insecticidal soap or horticultural oil can be used, but be sure to make contact with the larvae. For heavier infestions, options include spinosad (Conserve) or acephate (Orthene).

Willow sawfly larvae are feeding gregariously (in clusters) on *Salix alba* 'Britzensis'
Photo: Marie Rojas, IPM Scout

Assassin Bugs

By: Paula Shrewsbury, UMD

Marie Rojas, IPM Scout, found early nymphs of assassin bugs in the Frederick area. Assassin bugs are very important predators of a diverse array of pest insects found feeding on ornamental plants and in other natural and managed plant systems. Most assassin bugs are ambush predators and hang out on foliage and flowers in search of prey such as caterpillars, flies, beetles, aphids, hoppers, and more. An assassin bug approaches its prey slowly, quickly grabs it with its front legs, and then impales the insect with its beak. Through its beak, the wheel bug injects digestive enzymes which liquefy the body tissues of the prey making it possible for the predator to suck up its food.

Be careful if you handle these predators – they will defend themselves and their long "beaks" can result in a painful bite.

Assassin bugs are generalist predators that feed on many plant feeding insects
Photo: Marie Rojas, IPM Scout

Beneficial of the Week

By: Paula Shrewsbury, UMD

Wolf spiders: busy feeding and making spiderlings

Last weekend, we had a family get-together at my house which included my granddaughters and niece (2.5, 5, and 5 years old). Of course, one of the fun activities we do when we are together is to go "bug hunting". On this warm sunny day this involved turning over ALL the stones bordering the flower beds. There was lots of yelling and excitement in response to our arthropod finds! One the best things found was a female wolf spider who was carrying her round white egg sac under her abdomen.

A female wolf spider carrying a white egg sac under her body
Photo: Mike Raupp, UMD

Wolf spiders are in the family Lycosideae. I believe the spider we found was *Tigrosa helluo*. Wolf spiders are ground dwelling generalist predators that commonly inhabit and hunt in lawns, leaf litter, under rocks, around buildings, and in similar habitats in urban and natural areas. Wolf spiders are hairy and large (1/2" – 2"), robust, and brown to black to gray in color. Like most spiders they have 2 body segments consisting of a fused head and thorax (cephalothorax) and an abdomen. Their 8 long legs are covered with hairs that help detect air movement by potential prey or predators. They have fang-like mouthparts (chelicerae) and venom glands. At the tip of the abdomen, there are several small silk producing appendages called spinnerets. However, wolf spiders do not use silk to make webs, but they construct burrows in the ground and use silk to line their shelter. Wolf spider females also use silk when creating egg sacs. An interesting behavior of wolf spiders is that the females are maternal and will care for their young. A female lays ~100 eggs that she encases in a silk sac, usually round in shape and whitish in color. She carries the egg sac under her body, protecting it, for several weeks (see image). As we found last week, now is the time of year when you often see females with their egg sacs. When the eggs are ready to hatch, the female helps her babes to escape by tearing open the silk sac. The spiderlings then crawl out and onto the mother covering her abdomen. The spiderlings will hang onto "mom" for several days where they benefit from her care (food and protection), then drop off and become independent.

Wolf spiders are mainly nocturnal hunting spiders. While many spiders build webs to trap their food, wolf spiders hunt and stalk their prey like wolves do in the mammal world. They have excellent vision that leads to their success as hunters. They may ambush or run down their prey which includes insects such as caterpillars, earwigs, ants, beetles, grasshoppers, crickets, roaches and other spiders. Wolf spiders use their legs to seize their prey and their jaws to hold and crush their victim. The fang-like mouthparts are used to inject venom and enzymes that start the digestion process and make the prey nice and juicy for easier consumption. Wolf spiders hunt actively from late spring to fall. An individual wolf spider can live for 3-4 years. Populations of wolf spiders can be quite large in areas with abundant prey. However, wolf spiders have their own natural enemies. Spider hunter wasps will attack wolf and other spiders. Wolf, and other, spiders are a fundamental part of healthy ecosystems and are major contributors to biological control in lawns, landscapes, and nurseries.

A fun thing to do at your next night time outdoor event is to "headlight" for spider eye-shine! Wolf spiders and their friends can be amazingly abundant in lawns and meadows. By holding a bright flashlight at just the right angle (about forehead height) and projecting the beam about 10 yards ahead, you can encounter the reflection of spider eyes. By walking towards a pair of shiny reflective eyes, if you are lucky, you may encounter an amazing spider! Definitely party fun!

Newly hatched spiderlings covering the abdomen of their mother
Photo: Mike Raupp, UMD

For an interesting video on wolf spiders go to: http://www.wikihow.com/Identify-a-Wolf-Spider (scroll down to the video)

Weed of the Week

By: Chuck Schuster, University of Maryland Extension

The fields are showing off a lot of blooms this week. Cool wet conditions are helping many weeds take off for the season. One of the blooms is that of an invasive plant called garlic mustard. Garlic mustard, *Alliaria petiolata*, is an invasive weed found throughout much of the East Coast of the United States, that is moving beyond this region. It may also be known as hedge-garlic, sauce-alone, Jack-by-the-hedge, poor man's mustard, garlicwort, or mustard root. This weed is a cool season biennial that produces a heart-shaped, coarsely toothed leaf which appeard on a stalked stem that grows to 3.5 feet tall. The leaves will give off a garlic odor when crushed. During the winter, the plant will have a green rosette that remains very close to the ground. Flowers have four petals that form a cross.


Garlic mustard continues to flower this week
Photo: Chuck Schuster, UME

This plant is a prolific seed producer, producing thousands of seeds per plant each season that can be dispersed several feet from the plant. Garlic mustard prefers a shaded understory location, slightly acidic soils that are moist. It is a self pollinating plant in many cases, and will shade out other plants quickly with its dense foliage. Removal by pulling will only be successful when the complete root system is pulled. Removal of the flowering parts is partially successful as it can bolt again later.

Wildlife and livestock do not prefer garlic mustard, will graze around it, and eventually trample it in some cases. The eggs of the West Virginia white butterfly (*Pieris virginiensis*) laid on this plant seem to not hatch, indicating some type of insect poison may be present.

Attempts to control garlic mustard with mowing will be met with less than the success desired. This plant can produce a seed cluster very quickly. Chemical control in a landscape can be obtained using glyphosate products at the 1% to 2% rate. Triclopyr (Garlon3a) can be used, even during the winter months when temperatures are at 50 °F or higher. Rodeo or Aquamaster may be used near water to control garlic mustard. This weed has seed that will remain viable in the soil for up to five years, so control is a long term commitment. This weed can be found in many settings, so everyone must be aware of it. Watch for it coming with trees and shrubs in pots or on soil balls to prevent establishment where it is currently not found.

With this wet weather, nutsedge will be taking off over the next week
Photo: Kevin Nickle, ProLawn Plus, Inc.

Plant of the Week

By: Ginny Rosenkranz, University of Maryland Extension

Red buckeye, *Aesculus pavia*, is a deciduous shrub that blooms in April to May with bright red, narrow tubular flowers that grow 4-10 inches high. One common name is the firecracker plant, as the flowers look like firecrackers about to explode. The early hummingbirds flock to the plant when it is in bloom, and other pollinators like it as well. In the fall, the nuts or buckeyes are enjoyed by the squirrels, but should not be eaten by humans. They are called buckeye due to the white scar found on the brown seed that can look like the eye of a deer. The shiny dark green leaves are composed of 5 palmate leaflets and are very attractive in the spring through the early summer, but are often scorched by the sun and heat if not planted in afternoon shade. Leaflets are toothed with a smooth top and fine hairs on the bottom. The fall color of the foliage is bland. Red buckeye grows about 12-15 feet tall and wide and is cold tolerant from USDA zones 4-8. The growth habit is an irregular rounded crown. It can tolerate acidic soils, sandy soils, and clay. It is found in low, rich wooded valleys, on wooded slopes, at the base of a bluff or along a stream. Red buckeye can be used in the landscape as a specimen flowering tree or, as many other native shrubs, it spreads by suckers and can make a hedge or screen. It can also be used in a rain garden. Leaf scorch is an issue in dry soils. Leaf blotch can be a severe disease problem.

Red buckeye produces bright red flowers early in the season which attract hummingbirds and striking palmately compound leaves
Photos: Ginny Rosenkranz, UME

Phenology

PLANT	PLANT STAGE (Bud with color, First bloom, Full bloom, First leaf)	LOCATION
Liriodendron tulipifera	First bloom	Ellicott City (May 17)
Robinia pseudocamellia (black locust)	Full bloom	Ellicott City (May 17)
Tradescantia virginiana	First bloom	Ellicott City (May 17)

Degree Days (As of May 15)

Aberdeen, MD (KAPG)	390	Annapolis Naval Academy (KNAK)	543
Baltimore, MD (KBWI)	508	College Park (KCGS)	491
Dulles Airport (KIAD)	505	Frederick (KFDK)	423
Ft. Belvoir, VA (KDAA)	545	Greater Cumberland Reg (KCBE)	440
Gaithersburg (KGAI)	479	Martinsburg, WV (KMRB)	442
Natl Arboretum.Reagan Natl (KDCA)	622	Salisbury/Ocean City (KSBY)	528
St. Mary's City (St. Inigoes, MD-KNUI)	583		
Westminster (KDMW)	493		

Important Note: We are now using the Weather Underground site for degree days. It changes some of the locations available.
1. Enter your zip code (not all locations are included, check nearest weather station to your site) and hit enter
2. Click the "custom" tab/button below the date
3. Enter the start date below the word "from" (ex. Jan. 1) and the end date below the word "to" (current date)
4. Hit the get "history" button
5. Read your growing degree days (base 50) in the 'Sum' column (=Cummulatlive DD to date for the year)

CONFERENCES

Conference information is posted at:
http://extension.umd.edu/ipm/conferences

Eastern Shore Pesticide Recertification Conference
June 1, 2018
Location: Wye Research and Education Center, Queenstown, MD
Contact: Ginny Rosenkranz, rosnkrnz@umd.edu

2018 Procrastinators' Pest Management Conference
June 8, 2018
Location: Montgomery County Ext. Office, Derwood, MD
Contact: Chuck Schuster, cfs@umd.edu
DC— pending; MD—CORE, 3A, 3B, 3C, 5, 6 and 10
VA— 3-A, 3-B, 5-A, 60; MD Turf NM Credits—2 CEU's

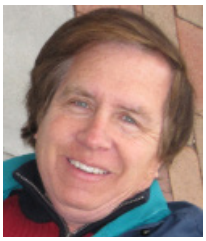
Brochure: https://extension.umd.edu/sites/extension.umd.edu/files/_docs/Procrastinator%20Brochure%202018a_0.pdf

Eventbrite link: https://www.eventbrite.com/e/23rd-annual-procrastinators-pesticide-and-urban-nutrient-management-conference-tickets-45519688614?aff=efbevent

The Pest Predictive Calendar is a monitoring tool to assist in predicting when susceptible life stage(s) (stage you want to target for control measures) of pest insects are active by using plant phenological indicators (PPI) and growing degree days (GDD). This tool will lead to improved timing of management tactics and more effective pest management.

Check it out at [Pest Predictive Calendar]

CONTRIBUTORS:



Stanton Gill
Extension Specialist
sgill@umd.edu
410-868-9400 (cell)

Paula Shrewsbury
Extension Specialist
pshrewsb@umd.edu

Karen Rane
Plant Pathologist
rane@umd.edu

Chuck Schuster
Extension Educator
cfs@umd.edu

David Clement
Plant Pathologist
clement@umd.edu

Andrew Ristvey
Extension Specialist
aristvey@umd.edu

Ginny Rosenkranz
Extension Educator
rosnkrnz@umd.edu

Nancy Harding
Faculty Research
Assistant

Joe Roberts, Plant Pathologist (Turf)
robertsj@umd.edu

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Photos are by Suzanne Klick or Stanton Gill unless stated otherwise.

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